Amendments to the Specification

Please delete the heading beginning on page 1, before the title of the invention, as follows:

~~DESCRIPTION~~

Please amend the heading on page 1, line 4, as follows:

~~Technical Field~~

BACKGROUND OF THE INVENTION

1. Technical Field

Please amend the paragraph beginning on page 1, line 5, as follows:

The present invention relates to a component verification method that is used for mounting electronic components by a mounter, and particularly to a component verification method utilizing an integrated circuit (IC) tag.

Please amend the heading on page 1, line 10, as follows:

~~Background Art~~

2. Description of Related Art

Please amend the paragraph beginning on page 1, line 11, as follows:

Mounters that mount electronic components onto boards such as printed ~~board~~ boards are required to perform verification to see if correct components have been placed on a component cassette before a mounting operation. Conventional mounters include one that performs component

verification by use of information such as component names and the number of components represented as barcodes (for example, see Japanese Patent publication No.2932670).

Please amend the paragraph beginning on page 2, at line 2, as follows:

However, there is a problem with the conventional mounter in that it is necessary, prior to component verification, to transport barcode information to the memory of each component cassette for each type of tapes to be used. In general, the number of component tape types to be handled by one mounter is 20 to 50, and sometimes amounts to 100, and thus, it is troublesome for workers to transport barcode information to the memory of each component cassette for each of all such types of component tapes.

Please amend the paragraph beginning on page 2, at line 28, as follows:

The present invention has been conceived in view of the above problems, and it is an object of the present invention to provide a component verification method for a mounter that enables component verification to be performed with less labor.

Please amend the paragraph beginning on page 2, at line 32, as follows:

Another object of the present invention is to provide a component verification method for a mounter that causes fewer operating losses at the time of component mounting.

Please amend the paragraph beginning on page 3, at line 3, as follows:

Further, ~~Further~~ another object of the present invention is to provide a component library generation method for a mounter that requires little labor.

Please amend the heading beginning on page 3, at line 7, as follows:

~~Disclosure of the Invention~~
SUMMARY OF THE INVENTION

Please amend the heading beginning on page 9, at line 12, as follows:

~~Brief Description of Drawings~~
BRIEF DESCRIPTION OF THE DRAWINGS

Please amend the heading beginning on page 13, at line 4, as follows:

~~Best Mode for Carrying Out the Invention~~
DETAILED DESCRIPTION OF THE INVENTION

Please amend the paragraph beginning on page 16, at line 4, as follows:

In this specification, one iteration of the repeated series of processes where the line gang pickup head 112 picks up, transports, and mounts components and the group of components handled in such iteration are both referred to as a "task". As one example, when the line gang pickup head 112 has ten nozzles, the maximum number of components that can be mounted by a single task is ten. It should also be noted that a "pickup operation" refers to all of the operations performed from when the head starts to pick up components to when the line gang pickup head 112 transports the components. In this specification, a pickup operation refers not only to when ten components are ~~picked up by to~~picked up by the line gang pickup head 112 with a single nozzle stroke (a raising and lowering of the line gang pickup head 112), but also when ten components are picked using several nozzle strokes.

Please amend the paragraph beginning on page 31,, at line 30, as follows:

FIG. 17 is a diagram for explaining a method for specifying the Z number of a carrier tape 424 from an IC tag. The two IC tag readers/writers 111 specify the position of each IC tag 426b based on the direction of electric waves received from each IC tag 426b. When the position of each IC tag 426b is specified, its Z number is then specified. Here, since the two IC tag readers/writers 111 receive component name information from each IC tag 426b, the component name as well as the Z number of each component cassette 114 can be specified based on information received from each IC tag 426b. For example, as shown in FIG. 17, suppose that the Z number increases by one every time X increases by ten. If the position of a component A is specified as (X, Y) = (10, 4), it is possible to know from the X coordinate that the Z number of the component A is 1. Note that two components exist on the same Z position in the case of a double cassette, but their X coordinates are different, it is possible to know which component tape is placed at the left side/right side of the double cassette.

Please amend the paragraph beginning on page 34, at line 4, as follows:

The component verification apparatus 300 checks whether a component cassette 114 holding a component tape has been set to the component supplying unit 115a/115b based on an output of the switch 450 (S11A). When a component cassette 114 is newly set to the component supplying unit 115a/115b (YES in S11A), the Z number of the newly set component cassette 114 is specified based on an output of the switch 450 (S12A). After this, one of the IC tag readers/writers 111 obtains component information ~~form the~~from the IC tag 426b of the component tape that has been set (S13).

Please amend the paragraph beginning on page 35, at line 8, as follows:

In the component verification processing shown in FIG. 19, the Z number of each component cassette 114 is specified based on an output of the switch 450. Therefore, in the case of a double cassette, it is impossible to correctly specify the position of each component tape. Moreover, ~~also in~~ in the case where plural component cassettes have been simultaneously set in a collective manner, it is impossible to specify the position of each component tape. For this reason, the present embodiment may be configured so that the position of each component tape can be specified by use of the IC tag readers/writers 111.

Please amend the paragraph beginning on page 35, at line 18, as follows:

FIG. 20 is a flowchart showing a variation of the component verification processing shown in FIG. 19. The component verification apparatus 300 checks if a component cassette 114 holding a component tape has been set to the component supplying unit 115a/115b, by use of two IC tag readers/writers 111 (S11B). In other words, as explained by reference to FIG. 17, the position of the component cassette 114, to which an IC tag 426b is attached, is specified by checking the position of such IC tag 426b using the two IC tag readers/writers 111. When a component cassette 114 is newly set to the component supplying unit 115a/115b (YES in S11B), the Z number of the newly set component cassette 114 is specified by the two IC tag readers/writers 111 (S12B). The subsequent processes are the same as those shown in FIG. 19, and therefore detailed descriptions thereof are not repeated here. Note that in the case of a double cassette, the use of the two IC tag readers/writers 111 makes it possible to check whether or not information stored in one of the right and left sides of the cassette matches the component arrangement data. Furthermore, the provision of~~it becomes not mandatory to be equipped with~~ a switch 450 is not mandatory.

Please amend the paragraph beginning on page 37, at line 25, as follows:

Next, the component verification apparatus 300 writes, to the IC tag attached to the board, information about each component that has been mounted (S33). Aside from component information, the component verification apparatus 300 may also write information related to the mounter 100 (200) that was used for manufacturing. For example, information that may be written to an IC tag includes component information related to a component that was mounted onto a board, as well as manufacturing information such as production management information, error information, nozzle information and camera information. The IC tag reader/writer 111 ~~are used~~ is used for writing such information.